



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,634	12/29/1999	FU-JYA DANIEL TSAI	659/1483	2504

7590 07/12/2004

G Peter Nichols
Brinks Hofer Gilson & Lione
P O Box 10395
Chicago, IL 60610

EXAMINER

PIERCE, JEREMY R

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/474,634

Applicant(s)

TSAI ET AL.

Examiner

Jeremy R. Pierce

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-22 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on April 30, 2004 has been entered. Claims 1 and 27 have been amended. Claims 1-22 and 24-29 are currently pending, with claim 16 being withdrawn from consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-15, 17-22, and 24-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites "the biodegradable nonwoven web is thermally bonded at a temperature less than about 23°C above the melting temperature of the first biodegradable binder fiber." Support is not found for this in the specification. Applicant's Table 2 shows examples where a nonwoven web is bonded at a temperature of 23°C above the melting temperature of the first biodegradable binder fiber, which is compared to a nonwoven web bonded at a temperature of 2°C below the

Art Unit: 1771

melting temperature of the first biodegradable binder fiber. However, this Table does not embrace Applicant's claimed temperature range. Nowhere does Applicant teach that bonding at a temperature of less than about 23°C above the melting temperature of the first biodegradable binder fiber is advantageous for the present invention.

Claims 1 and 27 recite "using only convective heating to thoroughly bind, but not overbind, the web." Support for not overbinding the web is not found in the specification.

Claims 17, 18, 20-22, 27, and 29 all recite various temperature ranges in which the web is to be thermally bonded, compared to the melting point of the first biodegradable fiber. However, so support is found for these temperature ranges in the specification.

Claims 24 and 25 recite a fiber length for the first and second biodegradable fibers. While the specification does disclose fiber length values for the first fiber (page 11, line 29), no support is found for any recited length of the second fiber.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-15, 17-22, and 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 27 recite, "using only convective heating to thoroughly bind, but not overbind, the web." At what point of the bonding phase is the web considered overbound? This characteristic is amorphous, as one person having ordinary skill may

Art Unit: 1771

consider a web overbonded at a certain point, whereas another person having ordinary skill may consider that same web undercooked. The phrase "overbind" is not defined in the specification to set forth any definite meaning. Additionally, the degree of bonding is not dependent upon the heating process alone. A web comprising a higher percentage of binder fibers will have much more bonding than a web comprising a lower percentage of binder fibers.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-15, 17-22, and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai et al. (U.S. Patent No. 5,698,322) in view of Takeda et al. (EP 0,801,172) and either Handbook of Technical Textiles (HTT) or Thermal Bonding of Nonwoven Fabrics (TBNF).

Tsai et al. teach Applicant's claimed sheath/core binder fiber, as set forth in the previous Office Actions. Tsai et al. also teach said fibers as a mixture of fibers in a nonwoven, but fail to teach the other fibers that comprise said mixture (col. 9, lines 31-32). Tsai et al. disclose said binder fibers to be thermally bonded, but is silent with respect to a particular method of thermal bonding (col. 3, lines 55-56).

Takada et al. is concerned with the creation of a biodegradable nonwoven web. Takada et al. teach a combination of PLA binder fibers (p. 3, lines 4 and 57-58) and cellulose acetate fibers (p. 3, line 39) in amounts anticipating Applicant's claimed amounts (p. 3, line 42). It would have been obvious to a person having ordinary skill in the art to form the mixture taught by Tsai with Takada's cellulose acetate fiber. Such a combination would have been motivated by the desire to increase the liquid absorbency, impregnation retention, and tensile strength of Takada's fibers (p. 3, lines 36 and 47).

Tsai teaches said binder fibers can be bonded at a temperature below 145 degrees, but does not teach a method of effectuating said bonding (col. 6, line 48). HTT and TBNF both teach the extremely common and well-known method of through-air bonding (p. 143 and 1, respectively). It would have been obvious to bond the fabric of Tsai by a through-air bonding method. Such a modification would have been motivated by the desire to fill the gaps of Tsai's teachings and produce a bulky, open, soft, strong, extensible, breathable, and absorbent nonwoven material.

With respect to applicant's claimed melting/bonding temperature of said binder fibers, this property is inherent in the polymer. Tsai teaches applicant's claimed range of melting points. Therefore, it would have been obvious to bond said fibers within 2-10 degrees above or below the melting point based on the desired production speed. Altering the bonding temperature also allows for optimization of the strength and disintegratability properties of the web.

With respect to the claimed temperature at which the web is bonded, one having ordinary skill in the art would have found it obvious to bond the nonwoven fabric within 23 degrees above the melting temperature or within 5 degrees below. Tsai is concerned with the creation of a nonwoven web, which more easily disintegrates, yet has sufficient strength (col. 1, lines 52-65). Tsai also teaches that is desirable to keep the bonding temperature low (column 2, lines 3-11). A fabric would disintegrate more readily if it were less bonded. Similarly, a fabric would have increased tear strength if bonding were increased. Increasing or decreasing the bonding temperature can easily modify the amount of bonding. Higher temperatures melt more fibers to create more bonding sites. Lower temperatures, of course, have the opposite effect. Therefore, the skilled artisan would have been motivated to decrease the bonding temperature by the desire to increase the disintegration ability of Tsai's fabric. The skilled artisan would have been motivated to increase bonding temperature by the desire to increase the strength of the fabric. Bonding temperature is a result effective variable that modifies the properties of the web. It would have been obvious to a person having ordinary skill in the art at the time of the invention to bond at a temperature within 23 degrees of the melting point in order to enable the binder fibers to perform the desired function of bonding the web, and to not cause the structural fibers to melt, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). With respect to the limitation that the heating does not overbind the web, a person having ordinary

Art Unit: 1771

skill in the art would not want to overbind the web, as such term is amorphous, and describes any point at which a person would want the bonding process to end.

With respect to applicant's claimed permeability and void volume, it is the Examiner's position that these properties are inherent in the web created by the combination set forth above because said combination teaches the same materials, structure, and method of production claimed by applicant.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-15, 17-22, and 24-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-14 and 16-30 of copending Application No. 09/474,579. Although the conflicting claims are not identical, they are not patentably distinct from each other because the '579 Application specifies that the secondary fiber is high tenacity cellulosic while the instant application is broader and does not limit the secondary fiber. Therefore, the '579

Application essentially acts as a species that anticipates the broader genus represented by the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

10. Applicant's arguments filed April 30, 2004 have been fully considered but they are not persuasive.

11. Applicant argues that Tsai teaches away from increasing temperature to increase strength. Applicant points to column 9, lines 1-5 in Tsai for support. However, this section of the Tsai patent is related to heat setting temperatures designed to maximize crystallization of the of the material before the bonding stage (column 8, lines 50-52). Tsai is not discussing the bonding temperature itself. Furthermore, Applicant's claim reads that the web is thermally bonded at a temperature within 23 degrees above the melting temperature of the first binder fiber. It is not the Examiner's position that one would want to bond the web at a higher temperature than the claimed range. A person having ordinary skill in the art would not bond at a temperature that is so high above the first material's melting point that it would also start to melt the structural second material of the web. Tsai also expressly teaches this (column 4, lines 7-18). However, even within Applicant's claimed range of a temperature within 23 degrees above the melting temperature of the first binder fiber, there are also smaller temperature ranges in which one could bond the web, as Applicant further claims, for example in claims 17, 18, and

20-22. A person having ordinary skill in the art would use a higher bonding temperature to increase strength (i.e. the temperature range in claim 20), and a lower bonding temperature to decrease strength and allow for more disintegration (i.e. the temperature range in claim 21).

12. Applicant argues that the claimed permeability and void volumes result only when the claimed combination of materials is processed according to the non-obvious conditions set forth in the claims. However, the Examiner asserts the properties are inherent, because Applicant's processing conditions set out in the claims are obvious. It is known to adjust bonding temperature in order to increase or decrease the amount of bonding in a web. Softer webs are obtained through less bonding.

13. Applicant argues that if one were to increase the strength of the web, it would lead to overbonding. However, a person of ordinary skill in the art does not need to go overboard. One could choose to melt the web at a temperature 20 degrees above the melting point of the first fiber, rather than melting the web at a temperature 10 degrees above the melting point of the first fiber. This would lead to increased strength, as set forth above, because the bonding temperature is increased. However, this does not necessarily mean the web is overbonded.

Conclusion

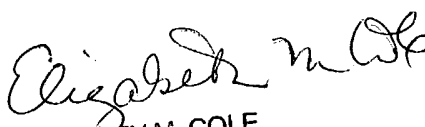
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571)

272-1479. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRP
JRP


ELIZABETH M. COLE
PRIMARY EXAMINER